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UTCS ComputerNews

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# Let's Talk About It: What We Cost Last Year

Gentle reader, I have been going over our year end financial position and I think you will find it interesting, particularly the income side. We look at things from three points of view in doing this analysis. First, we consider our approved (at the beginning of the year) 82/83 budget. Next, the year end budget reflects all sorts of approved additions and deletions, and we finally report what we actually spent in 82/83. Before going further, let me dig into what the year end budget is, since the other two are fairly self-explanatory. The 'going in' 82/83 budget was our best analysis of what it would cost to run UTCS and do all the projects and tasks expected of us. The year end budget reflected all the unforeseen variations on these 'going in' assumptions, including, for example, the IBM partnership machine costs and the fact that we were charged provincial sales tax.

The accompanying schedules show both expenses and income in this format. 'Salaries and benefits' include full and part-time salaries, overtime, shift premium and meal allowance minus any salary recoveries. 'Total computer related expenses' include hardware and software purchases, leases, rental and maintenance, communications costs, and computer related consumables such as paper, graphics supplies, disks, and tapes. The final budget breakdown for this number was about $3,400,000 hardware, $314,000 consumables, and $529,000 software. 'Other' expenses are things like office supplies, manuals, furniture, administrative expenses, education, travel, and house-telephones. 'Indirect expenses' are an interesting item over which we have no control. However, we are automatically funded for them and automatically debited, so we really are not concerned with them. They are made up of items such as space costs, finance charges, depreciation and an administration charge (our piece of Simcoe Hall et al, I guess).

The income side is summarized in Schedule II and detailed in Schedule III. We are frequently accused of being too expensive or charging too much. Our expenses are, I believe, reasonable for the range of services we offer, and we have a few benchmarks to back this up. However, on a global basis, we certainly do not charge more than our total costs, in fact we obviously charged back only $5,500,000 for costs of 8 or 9,000,000 (depending on whether you count indirect expenses).

Schedule III has some interesting numbers to explore. We are judged, in the end, by our net cost to the University, which is total expense offset by hard dollar income. However, the amount of the grant portion of research income, where there was a 10% shortfall, is something over which we have no control. There was a substantial shortfall on commercial income as well.

The entitlement budget has some interesting items in it. The entitlement part of research income was planned at 1.25 times the real money and actually came in at 1.16 times. A number of the items which appear are activities we no longer do, such as contract programming. Unit record rebates are refunds we give to users with remote job entry stations who supply their own paper. In many cases we effectively launder computer entitlement money in this manner.

In the final analysis we do not generate income, in whatever form, to cover our costs. We may well charge too much for a particular service and nothing at all, at least directly, for another. Globally, however, we do not cover our costs. We are analyzing our costs per service right now to attempt to really understand cost per service, as opposed to simple machine resource costs. As we gain more knowledge of our costs we will discuss them in this column.

*Warren Jackson*

## SCHEDULE I - EXPENSES

| | APPROVED BUDGET 82/83 | APRIL 30/83 FINAL BUDGET | 1982-83 ACTUALS | APRIL 30/83 UNCOLLECTED/UNSPENT FUNDS |
|---|---|---|---|---|
| A. Direct Expenses | | | | |
| Total Salaries & Benefits | 3,610,705 | 3,723,780 | 3,608,160 | 115,620 |
| Total Computer Related Expenses | 3,627,826 | 4,265,019 | 4,162,774 | 102,245 |
| Total Other Expenses | 290,645 | 328,175 | 322,911 | 5,264 |
| Subtotal Direct Expenses | 7,529,176 | 8,316,974 | 8,093,845 | 223,129 |
| B. Indirect Expenses | 948,487 | 948,487 | 948,487 | - |
| Total Ledger I Direct & Indirect Expenses | 8,477,663 | 9,265,461 | 9,042,332 | 223,129 |

## SCHEDULE II - INCOME

| | APPROVED BUDGET 82/83 | APRIL 30/83 FINAL BUDGET | 1982-83 ACTUALS | APRIL 30/83 UNCOLLECTED/UNSPENT FUNDS |
|---|---|---|---|---|
| Hard Dollars | (1,447,749) | (1,447,749) | (1,197,757) | (249,992) |
| Entitlements | (4,614,346) | (4,789,517) | (4,295,041) | (494,476) |
| Subtotal | (6,062,095) | (6,237,266) | (5,492,798) | (744,468) |
| UTCS Expense Budget not Budgeted as Expected Income | (2,415,568) | (2,294,544) | - | (2,294,544) |
| Total Ledger 4 Income | (8,477,663) | (8,531,810) | (5,492,798) | (3,039,012) |

## SCHEDULE III - INCOME DETAIL

| | ACCOUNT NAME | ACCT. NO. | APPROVED BUDGET 82/83 | APRIL 30/83 FINAL BUDGET | 1982-83 ACTUALS | APRIL 30/83 UNCOLLECTED FUNDS |
|---|---|---|---|---|---|---|
| A. | Hard Dollar Budgets | | | | | |
| | Research Income - Grant Portion | 61 | (564,749) | (564,749) | (513,957) | (50,792) |
| | Commercial Income (incl. prepaid sales) | 70 | (883,000) | (883,000) | (683,800) | (199,200) |
| | Subtotal Hard Dollars | | (1,447,749) | (1,447,749) | (1,197,757) | (249,992) |
| B. | Entitlement Budgets | | | | | |
| | Research Income - Subsidy Portion | 61 | (650,452) | (707,052) | (596,482) | (110,570) |
| | Contract Programming | 63 | (50,000) | (50,000) | - | (50,000) |
| | CSS Sales | 64 | (7,500) | (7,500) | - | (7,500) |
| | HSJS Income | 65 | (903,567) | (911,256) | (911,256) | - |
| | Academic Computing | 66 | (1,525,530) | (1,623,525) | (1,307,881) | (315,644) |
| | Admin. Computing Batch | 68 | (1,517,297) | (1,530,184) | (1,530,184) | - |
| | Unit Record Rebates | 60 | 40,000 | 40,000 | 50,762 | (10,762) |
| | Subtotal Entitlements | | (4,614,346) | (4,789,517) | (4,295,041) | (494,476) |
| | Subtotal Hard Dollars & Entitlements | | (6,062,095) | (6,237,266) | (5,492,798) | (744,468) |
| C. | UTCS Expense not Budgeted as Expected Income | 62 | (2,415,568) | (2,294,544) | - | (2,294,544) |
| | TOTAL LEDGER 4 INCOME BUDGET | | (8,477,663) | (8,531,810) | (5,492,798) | (3,039,012) |

# WYLBUR — An Alternative to Keypunches

As part of our efforts to upgrade research facilities and increase interactive access to our machines, UTCS is decreasing the number of research and instructional keypunches and replacing them with terminals. By September 1, 1983, there will be only 10 keypunches operated by UTCS on the St. George campus. It is very possible that this number will drop to zero within another year. (For a listing of the location of new terminals and the remaining keypunches, see the article 'Upgrading Research Facilities' in this issue of *COMPUTERNEWS.)*

If all our present users continue to use cards, then the demand for these keypunches will be very high. Therefore, UTCS has been encouraging users to consider alternate methods of accessing our mainframes.

One particular system which could replace the keypunch and card reader is the Remote Job Entry/Output system called WYLBUR. WYLBUR is a powerful programme editor and data entry system which manipulates various kinds of source programmes and computer jobs. It allows for on-line interactive editing such as data creation, modification, and deletion. It also provides the user with the capability of remotely submitting and retrieving jobs from a terminal.

## Advantages of WYLBUR

There are many advantages to using WYLBUR rather than cards. The following list details the ones that generally apply:

1. The cost of WYLBUR as compared to cards decreases as the number of cards increase or the number of runs increase.
2. Data entry, editing, and reviewing input can be done faster and more accurately because it is easier to see what you have typed.
3. Global changes are easy (impossible with a keypunch).
4. Duplicating data is done with one command.
5. You will spend less time (your time) at the terminal than at a keypunch.
6. You can work from your home or office using either your own terminal or a UTCS rental terminal that can transmit over telephone lines.
7. Source programmes can be compiled and kept in a load library so you do not have to spend money recompiling your source for every run.
8. You can fetch your output to the terminal rather than printing every job so you save printing costs during programme development.
9. You do not have to buy cards, carry them around with you, find a place to store them, or worry about dropping a card deck.

## Cost Comparisons

By using the data given below, you can work out whether or not WYLBUR can decrease your computer costs. To calculate your costs you need the following information:

For Cards:

1. Cost of a box of 2000 cards ($12.82 at the U of T Bookstore including tax).
2. Cost of reading cards @ $1.40/1000 cards.
3. Cost of printing output @ $1.40/1000 lines,
4. Intangible costs such as time spent at the keypunch and physically fetching your output.

For WYLBUR:

1. Cost of on-line storage (see Table II below),

continued...

**WYLBUR** continued

2. WYLBUR session charges — average $4.50/hr and are cheaper at night and on weekends.
3. Cost of printing output @ $1.40/1000 lines.
4. Intangible costs such as a lot less time spent at the terminal and not having to physically fetch output.

Note: by referring to Table I you will see that WYLBUR does not charge for reading cards (card images) from on-line storage.

Other costs that should be figured into your calculations include the cost of wasted cards because of keying errors, the number of runs required to get the job right, the number to times a programme will be run, and the number of cards to be read each run. Note: whether the job is submitted through the card reader or through WYLBUR, all other charges, i.e. execution time, should be equal. You may find other advantages to using WYLBUR as you investigate it further.

If you decide to use WYLBUR, you can pick up a copy of the WYLBUR Abstract at the UTCS Information Office, Engineering Annex, Room 206. The Abstract will tell you how to get started with WYLBUR and where to get more documentation. You can obtain a WYLBUR account at the UTCS Accounting Office, McLennan Physical Laboratories, Room 337 or call them at 978-8702.

If you still have questions about WYLBUR, please call me at 978-6346.

Remember, most of the keypunches will be disappearing by September 1, 1983.

*Steve Younker*

**TABLE I: WYLBUR COSTS**

| Records | Blocks Used (tracks) | Storage $/day | Storage $/month | Cost/Run (read) |
|---|---|---|---|---|
| 100 | 4(1) | 0.0135 | 0.0405 | free |
| 200 | 8(2) | 0.0270 | 0.0810 | free |
| 500 | 16(4) | 0.0540 | 1.6200 | free |
| 1000 | 28(7) | 0.0945 | 2.8350 | free |
| 5000 | 128(31) | 0.4185 | 12.5550 | free |

Storage cost in WYLBUR or CARD image format
1 card image or 1 WYLBUR record = 1 record
Charges are for multiples of 4 blocks (4 block minimum)
Card Image Format FB/80/3120
WYLBUR record format U/3156/3156

**TABLE 2: CARD COSTS**

| # of Cards/Runs | 1 | 5 | 10 | 25 |
|---|---|---|---|---|
| 100 | 0.14 | 0.70 | 1.40 | 3.50 |
| 200 | 0.28 | 1.40 | 2.80 | 7.00 |
| 500 | 0.70 | 3.50 | 7.00 | 17.50 |
| 1000 | 1.40 | 7.00 | 14.00 | 35.00 |
| 5000 | 7.00 | 35.00 | 70.00 | 175.00 |

*Note: cost per run in dollars*

Box of 2000 cards (tax included) - $12.82
Cost of reading 1000 cards - $ 1.40

# Humanities News

## Humanities Interest Group

On May 11, the Humanities Interest Group met to discuss the function of the newly created UTCS position of Humanities Support Specialist. A number of concerns were raised including the amount and type of support which can be given to individual projects versus more general support for all Humanities projects.

Further details are described in the minutes of this meeting. If you are not on the Humanities mailing list and would like to receive a copy of the minutes, send me a note with your name and address. My office is in McLennan Physical Laboratories, Room 217, or you can call me at 978-5130.

All minutes are also available on-line in print format for DEC-10 users in the file MAY11.LPT[204,1767,HIG] and in the WYLBUR dataset U05069.HIG(MAY11) for IBM 3033/N12 users.

## Natural Language Processing Steering Committee

On June 1, the newly formed Natural Language Processing Steering Committee (NLPSC) met for the first time to formulate the membership and terms of reference regarding support for projects. The members of the committee are: Prof. Ian Lancashire (Chairman), Prof. John Hurd, Prof. Russ Wooldridge, Dr. Eva Swenson (Coordinator of University Information Systems), Mr. Alberto Mendelzon (CSRG), and myself (UTCS, Humanities Support Specialist).

The committee decided that Humanities users who wish to make more than casual use of my time, i.e. more than an hour, should write me a letter with a copy to Prof. Ian Lancashire outlining their needs. This letter, along with my estimate for the time needed to handle the request, will be passed to the committee for a decision. Whenever possible, users will be referred to other faculty and research projects or to UTCS short courses which cover areas of their concern.

The NLPSC recommended that my time should be considered to be worth $50 per hour although there will be no *real* charge to the user. (This figure is based on the rate charged by commercial consultants and programmers.) Users should register the aid from this service as a contribution from the University for their projects. This aid should be acknowledged as an internal research grant when applying for grant money from other sources.

Meetings of the NLPSC are open for anyone to attend and minutes from these meetings will be publicly available. Additional details about this meeting are available on-line in print format in the file JUNE1.LPT[204,1767,NLP] for DEC-10 users. IBM 3033/N12 users can access the WYLBUR dataset U05069.NLP(JUNE1).

A number of projects requesting aid have already been approved and are receiving assistance. One of these projects is concerned with installing and modifying the Word Category Analysis System originally developed by Robert Cluett at York University. A second project involves producing a preliminary concordance of the works of the philosopher Leibniz using the Concordance Generation System (COGS) developed at UTCS by John Bradley. Additional programmes developed for this project to enhance COGS will also be made available to assist other researchers in their work.

*Lidio Presutti*

# Gould Support on the DEC-10

Gould support on the DEC-10 was introduced with the upgrade of the Graphics Software KIG from the current Version 2.8 to Version 2.9 on July 20.

The Gould 5200 is an electrostatic plotter which produces graphics output by producing black dots on a roll of white paper. The density of these dots (up to 200 dots per inch both down and across the paper) tends to form a continuous image. Like the Calcomp, the Gould is attached on-line to the IBM 3033/N12 and a SAC (System Access Code) for the General Purpose Job Stream will be required for producing Gould output.

KGF is the device independent graphics output file generated by the new Version 2.9 KGFGEN pseudo device driver. KGF files may be fed to either the Gould or Calcomp by simply specifying the new DESTINATION switch in the IPLOT command. Since the Calcomp has paper widths of 10.5 inches and 34.0 inches while the Gould has only the 10.5 inches paper width, a new switch REDUCE has been introduced to allow users to request an automatic uniform reduction in size from 34.0 inches to 10.5 inches during the hardcopy production cycle. This REDUCE switch will be helpful for debugging 34.0 inches wide Calcomp plots on the Gould.

Unlike the Calcomp which actually draws the graphics on the paper as the programme is executing, the Gould forms the graphics image in the computer memory before transferring the image to paper. This provides the useful feature of being able to erase figures or parts of figures that were specified in earlier parts of the programme. For example, you can blank out part of a filled rectangle to write in a line of text. The Calcomp Writer on the IBM 3033/N12 will be upgraded in conjunction with the Gould support on DEC-10 so that the Calcomp will ignore this erase mode in KGF input rather than terminate on error.

The DEC-10 Calcomp user will also notice that the ID-header at the beginning of his plot will contain more job information as the ID-header is brought to the same level of detail as other graphics jobs that run on the IBM.

The FORTRAN compiler on DEC-10 will be upgraded from Version 6 to Version 7 at the beginning of August. Due to the incompatibilities between the ANSI FORTRAN 66 and 77 standards implemented in Version 6 and 7 respectively, users will find it necessary to change some of their graphics FORTRAN programs. A particularly high impact area is the passing of quoted text strings in subroutine calls. Details on how to bypass the problem is described in a help file pointed to by HELP GRAPH.

For technical details on how to use the Gould plotter, please refer to the GRAPH help file which has pointers to other help files and documentation.

If there are any questions or suggestions, please contact me at 978-4924.

*Kin Fong*

# Report on the Spring DECUS Symposium in St. Louis

Spring DECUS, which was held this year in St. Louis, offered a vast amount of technical data on all types of DEC hardware and software. This article will only attempt to highlight some of the major announcements as well as those which may directly affect UTCS.

The biggest single event was DEC's surprise announcement that there will be no follow-on 36-bit processor to the KL which is the processor that UTCS has. Although DEC had been developing a new 36-bit machine (code named Jupiter) for years, DEC felt that the machine was so far behind schedule that it could not be brought to market and be profitable. At the same time, however, DEC announced that a great deal of money will be put into development of software for both TOPS-10 and TOPS-20. In particular, they announced that the development of Ethernet and Computer Interconnect software would be accelerated. (The CI is DEC's 70Mbit bus to which both cpu's and I/O controllers can connect.)

The development of improved software service for our existing DEC-10 would have many advantages. For example, Ethernet support for the DEC-10 could result in improved communication with the IBM 3033/N12 and allow communication with other machines including microcomputers. This in turn could mean less hardware and reduced maintenance costs for UTCS. The time frame for this software support from DEC is approximately two years.

Although DEC is increasing software support for Ethernet, it has been slow in introducing additional hardware. Right now DEC only sells hardware for connecting cpu's to the ether (via the DEUNA). A device that would allow dumb terminals to attach to the ether is a year off. DEC did announce a device called the LNI that allows the Professional PC's to connect to the ether if appropriate DECnet software is run in the PC itself. DEC cautioned users that attaching PC's to the ether is a security exposure because unscrupulous PC users can pretend to be another node on the network and steal messages that are destined for that node. DEC intends to introduce encryption hardware to deal with this problem.

Other announcements concerned the follow-on VAX processors that DEC has in the works. The next VAX will be announced in about a year and will be at the high end but is not the top end of the planned VAX line. This new VAX will be about 2 to 3 times the speed of a KL or about 5 to 6 times the speed of a 780.

There was a great deal of emphasis on DEC's part on the 'VAXcluster', a loose coupling of possibly dissimilar VAX cpu's running VMS. This clustering is intended to increase the availability of the system in large transaction environments. DEC was very careful to point out that VMS is an integral part of this clustering and that UNIX is not planned (at least by DEC) to make use of the cluster concept. DEC did announce that they will offer official software support for the Berkeley distribution of UNIX on VAX cpu's in about 6 months to a year. This follows last year's similar announcement for the PDP-11 cpu's.

DEC was promoting their office products very heavily including the Professional PC series as well as the Rainbow PC. One application of the Pro 350 that DEC had set up was called IVIS which integrates low-resolution color grahics with color video via a video-disk player under the control of the PC. IVIS can be used for computer-aided instruction as its ability to select and display individual frames from the video disk means that well prepared courseware could offer a large amount of data as well as many paths through a single course.

If you would like additional technical infor-

continued...

**DECUS** continued

mation about the above announcements, particularly those concerning VMS or TOPS-10, please call me at 978-6601 to discuss it in more detail.

*Corot Reason*

## MVS System Product 1.3.1

During the summer, UTCS will be installing MVS SP 1.3.1 on the IBM 3033/N12. Although the upgrading of the base operating system from SP 1.1.1 to SP 1.3.1 will have minimal impact on users, the concurrent upgrading of our JES2 subsystem will have some effect on JCL and TSO use.

Details of the new system and some of the effects it will have are available on-line through the following mechanisms:

| | |
|---|---|
| WYLBUR | DO MVSNEWS |
| TSO | MVSNEWS |
| Batch | // EXEC MVSNEWS |

We recommend that you read this information and bring any problems or questions to the attention of the Central Advising Office.

*Barry Lay*

## MVS Dataset Monitor

UTCS will be introducing some changes to the dataset monitoring and accounting system on the IBM 3033/N12 to allow for better use of the limited storage space available. One such change is the introduction of IBM's Heirarchical Storage Manager (HSM) to control on-line space, provide simplified data backup and recovery, and migrate dormant data to less expensive storage.

In order to operate properly, HSM requires all datasets in its care to be catalogued and does not allow multiple datasets with the same name. Prefixing dataset names with an account number or other unique identifier would ensure unique dataset names. Users are advised to begin cataloguing all their datasets.

As the policies for the new dataset monitor are finalized and additional details become available, users will be informed through articles in *COMPUTERNEWS* and on-line system messages.

*Barry Lay*

## TSO Translate Table Default Changing

TSO users should be aware that with the installation of the next release of the IBM MVS operating system UTCS intends to change the default translate table.

More information is available by reading the TSO Broadcast messages.

*Alex Nishri*

# VS/FORTRAN To Become Default

IBM FORTRAN users should be aware that on September 7, 1983, UTCS intends to make VS/FORTRAN the default version of FORTRAN. Users of FORT, FORTGO, FORTLEGO, FORTLE, FORTGOUL, and FORTPLOT will be affected. Using these JCL procedures, the default language level will continue to be LANGLVL=66 although UTCS is considering going to the IBM documented default of LANGLVL=77 in a few months. Users wishing to use VS/FORTRAN with LANGLVL=77 right now should be using the FORV, FORVGO, FORVLEGO, FORVLE, FORVGOUL, and FORVPLOT JCL procedures.

Most users should notice little difference other than improved error messages as well as debugging facilities and optimization combined in one compiler. Those users interested in keeping their programs current will be interested in VS/FORTRAN's ability to run under the FORTRAN-66 and FORTRAN-77 standard and to mix the two.

**Processor and Library Support Change**

The out-of-date FORTRAN compilers will continue to be accessible for a time by specifying the LEVEL= keyword in the JCL. Users with object decks or load modules compiled under older compilers may be able to link these with VS/FORTRAN compiled programs under many circumstances. If you are unable to re-compile such programs, please contact us.

Users should be aware that IBM will be dropping all support on the FORTRAN G1 compiler as well as the MODII FORTLIB on August 1, 1983. For this reason, these products will be reduced to Class C support at UTCS. Although UTCS will certainly continue to help users using these compilers, UTCS cannot guarantee these products will execute properly on any future IBM configuration. Users considering any potential FORTRAN application should keep this in mind before undertaking any major coding.

TSO FORT command users will continue to get the FORTRAN G1 compiler.

Users with questions or concerns are urged to contact the UTCS Central Advising Office at 978-HELP.

*Alex Nishri*
*Herb Kugel*

# PL/I Release 4.0 Update Report

As stated in the last issue of *COMPUTER-NEWS,* UTCS has been working on the installation of the PL/I Release 4.0 compiler and libraries. The difficulties with the distribution tapes obtained from the vendor have been overcome and the processor is now fully operational on the IBM 4341 MOD II. It is scheduled for testing by UTCS on the IBM 3033/N12 in the near future.

There are a great many applications on the IBM 4341 MOD II that involve PL/I. Users of that service should be aware that the procedures PLIXC, PLIXCG, PLIXCL, PLIXCLG, PLIXG, PLIXL, and PLIXLG

continued...

**PL/I** continued

support a PLIRLSE=4 symbolic parameter which allows users to access the release 4.0 compiler and libraries. We urge users to use the compiler as much as possible to find any hidden problems before the processor becomes the production default.

The compiler will be made available to any interested users of the IBM 3033/N12 once testing has been completed and shown to be satisfactory.

*Herb Kugel*

# APL Plans

We expect this summer to be a busy one for us. This article will briefly outline some of the changes which have occurred, and are about to occur, in the APL system at UTCS. As changes take place they will be announced in APL HOTNEWS which is accessed using the public library workspace: 1 HOTNEWS. If you are an APL user, please check APL HOTNEWS at least once a week in order to keep up with recent events.

## Installation of the November 1982 Release of SHARP APL

We expect to install the November 1982 release of SHARP APL at the end of the summer or early in the fall. In this release, event handling is extended and improved. There is a new system variable, ⎕EC, which is used to set the Environment Condition for security purposes. Support for complex numbers and for enclosed arrays has been improved. In addition, some functions and system commands have been optimized. For more complete information, please examine the Newrelease document which will soon be available using the public library workspace: 1 NEWRELEASE.

## Installation of the May 1982 Release of SHARP APL

On Saturday May 27, 1983, the May 1982 release of SHARP APL was installed at UTCS. There was an unexpected side effect of this installation. The old FF̲ file functions 7 and 8 (⎕APPEND and ⎕REPLACE respectively) ceased to work if the item to be written was a package. We contacted I.P. Sharp and they were able to provide us with a fix.

## Trimming The APL Public Library

On or about September 1, 1983, there will be another purge in the APL public libraries. Currently, there are several cases where essentially the same workspace is stored in more than one library. This situation is a maintenance nightmare, so wherever possible duplicate workspaces will be deleted. The following table lists the duplicated workspaces and names the workspace which will probably be deleted. Please note that there may be changes and it is important that you watch APL HOTNEWS for the final announcement of the names of the workspaces which will be deleted.

| Workspace Name | Libraries | Delete Workspace |
|---|---|---|
| ARBOUT | 2, 20 | 20 ARBOUT |
| ADVANCEDEX | 1, 41 | 1 ADVANCEDEX |
| APLCOURSE | 1, 41 | 1 APLCOURSE |
| CLASS | 1, 41 | 1 CLASS |
| PLOTFORMAT | 1, 21 | 1 PLOTFORMAT |
| TYPEDRILL | 1, 41 | 1 TYPEDRILL |

In addition, the workspaces 2 TTYFNS and 2 TTYHOW will probably be collapsed to a single workspace.

## XFR Class Change

As was announced in the May/June issue of *COMPUTERNEWS*, the job class for file transfer XFR jobs is changing from CLASS=W to CLASS=Y. A few public library workspaces were impacted by this change and have been adjusted. The workspace 20 GOULD was replaced on June 20, 1983, and the workspace 1 XFR

continued...

**APL Plans** continued

was replaced on June 28, 1983. The 5 ARJES utility will have been adjusted by the time you receive this issue of *COMPUTERNEWS.*

If you have any problems converting your applications, or if you are not sure you are affected by the change, please do not hesitate to call me at 978-6878.

*Mary Ann Lawry*

# LISREL

LISREL is another package which UTCS will be acquiring shortly. Researchers in the social and behavioural sciences will find LISREL to be invaluable for the analysis of linear structural relationships. LISREL VI is now available as an add-on procedure for use within the SPSS-X system. This will allow users of LISREL to take advantage of the power and flexibility of SPSS-X in entering, transforming, and managing data.

LISREL should be available sometime in the Fall of 1983. Further information on the status of LISREL will be given in HOTNEWS and *COMPUTERNEWS* as this project continues.

*Diane Mitchell*

# SAS/FSP

SAS/FSP (Full-Screen Product) provides interactive, menu-driven facilities for data entry, editing, and retrieval. A full-screen procedure allows you to work with a screen of data rather than one line at a time. UTCS is in the process of acquiring this new product for its users, and we are sure that many people will find it very useful. There will be five procedures in the '82 version of SAS/FSP:

- PROC FSEDIT for entering or editing data in a SAS data set
- PROC FSBROWSE for displaying observations in a SAS data set
- PROC FSCALC for financial modeling and analysis using an interactive electronic spreadsheet
- PROC FSLETTER for editing and sending letters
- PROC FSLIST for browsing through listing files, such as output from SAS procedures, and other external files.

For example, suppose you are responsible for the mailing list for a monthly magazine. You must keep the list up-to-date by making address corrections, adding new subscriptions and recording renewals, and when a current subscriber calls, you must be able to display his observation on the screen to check the current information. You will want to use PROC FSEDIT to add, delete, or update observations, and PROC FSBROWSE to display observations on the screen. PROC FSLETTER would simplify the process of sending out renewal letters to subscribers while PROC FSLIST could help with the checking of reports giving profiles of the subscribers. PROC FSCALC would be very useful for investigating how postal rates, advertising income, and number of subscribers affect the company's profits.

SAS/FSP should be available for use shortly. Please watch SASNEWS and HOTNEWS for further details.

*Diane Mitchell*

## Rate Schedule Change for External Users

On August 1, 1983, the service factor charge to external users of UTCS services will increase. The changes will affect both commercial accounts and affiliated organizations. This is the first such increase since August, 1980. It is being applied in order to make our external rates more accurately reflect the unsubsidized cost of providing computing services.

Commercial users (including Government agencies) will be charged at 2.6 times the university rate schedule for all services with the exception of most consumable supplies. Institutes directly affiliated with the University of Toronto, other universities, and non-profit organizations will be charged at 1.3 times university rates. The previous multiplying factors were 2.2 and 1.1 respectively.

Users should be aware that charges on the CAN reports will continue to be reported at the base University rate, before multiplying by the applicable factor. BPOA reports and invoices reflect the true charges, after external multipliers are applied.

*Bill Fehlner*

## Mainframe File Transfer Facility

UTCS is introducing a new service that will provide for file transfers from a user's microcomputer (or minicomputer) to one of UTCS' mainframes. Users might want to use this service to do the data collection on their own microcomputers and then transfer this data to a mainframe for further analysis i.e. to the IBM 3033/N12 for analysis with SAS. We expect the facility to be in service in early August.

In the past, microcomputer users experienced many difficulties in transferring their files to UTCS mainframes — especially the IBM 3033/N12. The methods used to make these transfers depended on several factors including how busy the mainframe was. These methods were not supported and were not very reliable.

The new Mainframe File Transfer Facility is a first step to improve this situation. The service will be a PACX class (73) which will be dedicated to file transfers. Attached to this PACX class will be a Protocol Converter that will connect the user to the front end of the IBM. It will support flow control with XON/XOFF. To the IBM it will appear to be a card reader. The important point to emphasize is that this Protocol Converter is dedicated to a particular file transfer session which improves its reliability.

The charges for this service are currently under review but they will most likely be based on rate per hour of Connect Time plus the normal charges for the Batch job submitted to do the transfer. Charging for this service will begin on September 1, 1983.

In summary, a number of points should be noted:

1. The service will be one way only: from a user's micro to the mainframe.
2. The baud rate is 1200 bits per second only.
3. The user's micro must support XON/XOFF flow control.
4. It will be aimed primarily at supporting transfers to the IBM 3033/N12 (i.e. Wylbur and TSO) but transfers can also be made to DEC-10 and PDP 11/70.
5. No error checking is done but the tests done indicate a very low error

continued...

**File Transfer** continued

> rate. Although the error rate could be as low as 1 in 10,000 UTCS can in no way guarantee 100% accuracy on these file transfers.

UTCS will continue to look at improvements to this service or for better alternatives that are easier to use, more effective, or provide error checking.

A User's Guide will be available soon with detailed instruction on how to use this service. For more information contact Philip Murton at 978-5271.

*Philip Murton*

## TELENET Users

Users accessing UTCS services via TELENET should be aware of changes in access as of July 1, 1983.

UTCS's new address is: 0302043200056.

*Philip Murton*

## Microsystems News

The Microcomputer Facility has moved to the McLennan Physics Laboratories, Room 220A. However, many of its microcomputer related books and periodicals will be transferred to the Computer Library in the Engineering Annex, Room 206, and will be available to the University community.

A Victor 9000 microcomputer was loaned to UTCS for several weeks in July for evaluation and UTCS staff wrote a short report summarizing its features and our impressions of the product. This report is available to anyone who would like a copy by contacting me.

The June meeting of the Campus IBM-PC Users Group featured a demonstration of the use of a mouse as an aid to word processing and spreadsheet calculations on the IBM-PC. The next meeting will be Tuesday, September 20, at 4 p.m. in the Galbraith Building, Room 202.

Microcomputer users on campus may be interested in the article "Mainframe File Transfer Facility" in this month's issue of *COMPUTERNEWS.*

For further information on any of the above topics, please contact me at 978-5071.

*Grant Davis*

## SCRIBE Course for SOS Users

Users with previous experience using the SOS editor on the DEC-10 may wish to become familiar with the new formatting program, SCRIBE.

Using predefined document formats such as letter, report, article, thesis, manual, etc., a manuscript file is prepared using the SOS editor. The SCRIBE formatting program is then run to produce a document file. SCRIBE also allows experienced users the flexibility of introducing variations to these document types.

The six-hour course will introduce the philosophy of SCRIBE, discuss SCRIBE's com-

continued...

**SCRIBE Course for SOS Users** continued

mands and environments, and provide the student with a number of hands-on exercises.

The course will be held from 9:30a.m. to 12:30p.m. on August 25th and 26th and will be limited to ten students. Knowledge of the SOS editor and a DEC-10 account number are prerequisites for this course.

To arrange registration, please contact Irene Rosiecki at 978-4565.

*Dawne Smith*

## ATMS Phaseout Completed

On July 15, 1983, ATMS had its last production day at UTCS. ATMS was targetted for termination on that date because of the move to release 1.3.1 of MVS. Due to the large amount of work which would have been required to keep ATMS running when this change occurred, and because ATMS had been considered a very expensive service to offer, the UTCS Review Board agreed that ATMS should disappear when the new version of MVS was installed.

Other commitments made it essential that the new MVS system be available by the end of the summer. Hence, July 15th had been settled upon as the last possible date on which ATMS could be run without seriously threatening this commitment. However, UTCS had begun to prepare for the ATMS phaseout as early as November of 1982, and has continued to talk to current users, and assist in their conversion plans (where possible) since that time. During the phaseout the following activities were undertaken:

- Users were notified by letter and by telephone about the ATMS phaseout. A total of three different letters, targetted to different parts of the ATMS community were sent out. During April and May many people were called by telephone.
- Articles appeared in *COMPUTERNEWS* warning users of the impending disappearance of ATMS.
- UTCS sponsored an ATMS phaseout seminar. At this seminar UTCS discussed the phaseout plans and demonstrated several UTCS and non-UTCS alternatives.
- UTCS developed software to assist those who wished to move text entered on ATMS to other UTCS (and some non-UTCS) services.
- UTCS offered special training to assist users who were moving to other UTCS-supported text processing services from ATMS.
- UTCS has spent time with many people helping them to select an alternative service.

Although most people successfully moved their text out of ATMS before its demise, there may be some who did not manage to do so. Hence, UTCS will retain the last set of backup tapes from ATMS for one year. With these tapes it will be possible to recover text of material entered on ATMS, although it will require special UTCS support.

UTCS hopes that its efforts have helped to minimize disruption to users. The removal of ATMS will allow us to concentrate our efforts and provide better support for the remaining text products on UTCS machines.

*John Bradley*

## UTCS Short Courses

In the previous issue of *COMPUTERNEWS* we advertised the summer schedule of non-credit short courses offered at UTCS. We had a great response to most of the courses but there are still a few spots available for the following courses being offered in August.

**DEC101 - DECsystem-10 for Beginners**
Date: August 16
Time: 9:30 a.m. - 4:00 p.m.

**DEC301 - DECsystem-10 for Advanced Users**
Date: August 18
Time: 9:30 a.m. - 4:00 p.m.

**SAS101 - Introduction to SAS**
Date: August 8-12
Time: 2:00 p.m. - 3:00 p.m.

**SCR201 - SCRIBE for SOS Users**
Date: August 25-26
Time: 9:30 a.m. - 12:30 p.m.

All non-credit short courses are held in:

UTCS Education Facility
McLennan Physics Labs
Room 221

Anyone interested in taking these courses must register in advance. Please note the address change for registering for courses.

Educational Services Support Specialist
Engineering Annex
11 King's College Road
Room 207
978-4565

A non-refundable registration fee of $10.00, payable in cash or non-computing appropriation, must be paid 10 days before the course is scheduled to begin. Registrants are also required to hold a valid Service Access Code (SAC) for use during the course.

If the response to courses offered at UTCS is greater than the number of positions available, a waiting list is kept and the courses will be offered again during the fall term. Please note, however, that we reserve the right to cancel courses if registration is too low.

*Irene Rosiecki*

## Video-based In-house Education at UTCS

This fall UTCS will be offering Deltak video-based courses to departments and faculties on campus. The courses may be taken at our Deltak facility located in the Engineering Annex, Room 207, or elsewhere if the department has its own videocassette player and monitor. Individual and group rates for these courses are available upon request.

Using an in-house, video-based training course is flexible as well as cost and time effective. It provides training for an individual with minimum involvement on the part of other employees. It does not involve tuition, travelling, or living expenses which reduces the direct cost. And it is available when you need it.

Deltak is the world's largest producer of video-based training and information programmes. In 1981, Deltak produced 229 new courses, acquired 176 new courses from well-known independent producers, and maintained 180 existing courses.

Video courses available from Deltak cover a wide range of topics. A partial list of topics includes: Data Processing Concepts and Programming Languages, IBM Operating

continued...

**In-house Education** continued

Systems, Systems and Applications Development, Project Management, Data Base, Distributed Processing and Data Communications, Business Communications and Personal Skills, Supervisory and Management Techniques, Cost and Finance, Problem Solving and Decision Making, and Marketing.

If you would like to look through the catalogue of courses or require information on the cost of ordering courses, please contact:

Irene Rosiecki
Educational Services Support Specialist
Engineering Annex, Room 207
978-4565

*Irene Rosiecki*

## Farewell to the CRF Lab

The CRF Lab, also called the CSS Lab, has been in nearly continuous operation in the Sandford Fleming building since the early seventies. However, mounting maintenance costs and declining revenues mean we can no longer support the lab, and we would like to make arrangements regarding its two main computers — the PDP 11/40 with GT44 graphics and the PDP 11/05 with GT40 graphics.

The PDP 11/05 is being offered for sale either as a system or as components. It has an 11/05 processor, a GT40 graphics unit, a TU10 800bpi magnetic tape with one drive, two RK05-compatible drives, and a paper tape reader/punch. This system runs RT-11 but could be set up to run the UCSD p-system, Forth, or other operating systems. It is not suitable for running UNIX nor for RSX-11M (although it could run RSX-11S). If you would like to make a bid on all or parts of this machine, please contact Arny Sokoloff at 978-4549.

The PDP 11/40 with GT44 graphics has been the mainstay of the lab. We would like to find another party to carry on operation of the lab as a service for some fixed period of time, and would transfer ownership of the machine to any U of T department or Institute willing to undertake to operate it in its present state and pay the maintenance fees. There is considerable room for negotiation here. Please contact me at 978-6134 if you are interested. If no taker is found for this service, then this system too will be offered for sale in whole or in parts.

In any event, please be advised that UTCS will cease to offer the PDP-11 Lab as a service on or before November 1, 1983. On that date, we really will bid Farewell to the CRF Lab.

*Ian F. Darwin*

## Hours of Service

The following hours of service are in effect for:

**Civic Holiday**

| | **July 30**<br>**(Saturday)** | **July 31**<br>**(Sunday)** | **August 1**<br>**(Monday)** |
|---|---|---|---|
| 3033/N12 GPJS(Classes B,C,E), TSO, Calcomp | 10:00-18:00 | 10:00-18:00 | closed |

continued...

**Hours of Service** continued

| | **July 30<br>(Saturday)** | **July 31<br>(Sunday)** | **August 1<br>(Monday)** |
|---|---|---|---|
| 3033/N12 GPJS(Class A), HSJS, WYLBUR, APL, ATMS | 10:00-18:00* | 10:00-18:00* | unattended |
| DEC1090, 11/70 | 10:00-18:00* | unattended | unattended |
| BICS | unattended | unattended | unattended |
| LIBRA | unattended | unattended | unattended |

* Running unattended outside these hours.
Normal hours of service for all systems will resume Tuesday, August 2, 1983.

**Labour Day**

| | **Sept. 3<br>(Saturday)** | **Sept. 4<br>(Sunday)** | **Sept. 5<br>(Monday)** |
|---|---|---|---|
| 3033/N12 GPJS(Classes B,C,E), TSO, Calcomp | 10:00-18:00 | 10:00-18:00 | closed |
| 3033/N12 GPJS(Class A), HSJS, WYLBUR, APL, ATMS | 10:00-18:00* | 10:00-18:00* | unattended |
| DEC1090, 11/70 | 10:00-18:00* | unattended | unattended |
| BICS | unattended | unattended | unattended |
| LIBRA | unattended | unattended | unattended |

* Running unattended outside these hours.
Normal hours of service for all systems will resume Tuesday, September 6, 1983.

In the event of any changes to the above schedules, a notice will appear in HOTNEWS one week prior to the holiday.

Summer hours of service for the University of Toronto will be in effect July 4 until September 2, 1983. UTCS' office hours will be 08:45 to 16:30 during this time.

## Upgrading Research Facilities

During the summer, UTCS will be upgrading our facilities for researchers by replacing most of the keypunches with new XT100 terminals. The three sites affected by this change are Arts & Science (AST), Engineering Annex (EAT), and New Physics (NPT).

AST will have four keypunches plus an additional thirteen terminals connected via PACX to the IBM 3033/N12, DEC-10, and PDP 11/70.

EAT will have three keypunches and one keypunch interpreter in Room 104. (This is the only interpreter available to UTCS users.) Twelve new terminals connected via PACX will be added to the existing terminals available for researchers in Room 103. All terminals in that room will be for researchers only. The twelve student (LIBRA) terminals which are presently located there will be moved across the hall to the student area in Room 107.

NPT will have two keypunches in addition to its two Olivetti terminals which are connected to the IBM 3033/N12.

*Vera Cabanus*

# Change Committee

## Changes To The IBM 3033/N12 and IBM 4341 MOD II

1. SPSS-X, a new release of SPSS, will be installed for testing. This new release is significantly enhanced and is not compatible with the default release.
2. SAS release 79.5 was deleted from both the IBM 3033/N12 and the IBM 4341 MOD II on June 14. SAS 79.6 and the current release SAS 82.2 are still available.
3. SAS/FSP (Full Screen Product) will be installed on the IBM 3033/N12 in the future.
4. The TCAM TSO default translate table for ASCII/EBCDIC mapping on the IBM 3033/N12 will be changed on August 1. See on-line documentation for more information.
5. Effective September 7, all FORTRANs except VS/FORTRAN will be CLASS C support. This is only on the IBM 3033/N12. (See HELP TRANSLAT as well as the article in this issue.)
6. UTCS will provide a file transfer facility from microcomputers to the IBM 3033/N12. This is scheduled for early August. (See article in this issue.)
7. UTCS procedures on the IBM 3033/N12 were changed from SYSOUT=A to SYSOUT=* on July 11. This means that the output class will be the same as the message class specified by the user.
8. UTCS will be upgrading the operating system on the IBM 3033/N12 to MVS/SP 1.3.1. This is scheduled for August 1. (See article this issue.)

## Changes to WYLBUR

1. A 9700 LASER printer option was added to the WYLBUR on-line documentation EXEC files on May 24.
2. UTCS provided a 9700 LASER printer EXEC file on July 18 to allow users to print their own documentation on the LASER printer.
3. An EXEC file to support on-line printing of SCRIPT output was installed on May 18. This will be CLASS B support and is called CCLIST.
4. An EXEC file to retrieve ATMS text from archive tapes was installed May 18. This will allow users to retrieve their own ATMS documentation from archive tapes when ATMS is removed from the system on July 15. See EXEC files ATMSLIST and ATMSOUT.
5. WYLBUR users now have the option of suppressing signon messages. This was completed on June 9. See DO BROADCAST and DO LOGONGO.
6. A zap to make the RUN command work as supplied and documented by the vendors of WYLBUR was removed on June 24. Users should make sure they have the appropriate //SYSIN DD * statements and should not rely on the system to put them in.

## Changes to the DECsystem-10 Model 1090

1. TOPS-10 Version 7.10A, a new version of the operating system on the DEC-10, was installed on June 1.
2. RUNOFF, a text formatter on the DEC-10, became CLASS C support on June 9.
3. SCRIBE, a new text formatter, was installed on June 1. Type HELP SCRIBE for on-line information. A maintenance release of SCRIBE will be installed in the future.
4. FORTRAN-10 Version 7 will be installed on August 2. This is now available in NEW: for testing.
5. UTCS provided GOULD support for the DEC-10 in mid-July. (See article in this issue.)

## Changes to the PDP11/70

1. 3/4 megabytes of memory was added to this system on May 30.

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**Change Committee** continued

2. A new IPRINT facility was installed on June 13. This will allow users to have their output printed on the IBM printers at their choice of destinations. Users should be sure to specify their correct SAC and password. For more information type MAN IPR.

### Changes to Other Systems and Services

1. The Zoology Undergraduate Terminal (ZUT) was disbanded on June 1.
2. Surcharges will be increased on August 1. Charges of 1.1 will be increased to 1.3 and charges of 2.2 will be increased to 2.6. (See article in this issue.)
3. Charging for 9700 LASER output will be increased from 6 to 7 cents a page as of August 1.

*Cecilia Welch*

## Personnel Changes

**Martha Parrott** has joined UTCS as Documentation Editor and Co-ordinator and **Harriet Cooper,** formerly UTCS's Office Automation Specialist, has accepted the position of Supervisor/Editor of the Education and Library Services.

**Veronika Moravan,** who worked as a part-time Advisor for a number of years, is now working as a full time Consultant in the Central Advising Office. **Mike Grossman** will be working as an Advisor in the Advising Office for the summer.

**Cecilio Commandante** from UTLAS has joined UTCS as an Operator.

**Bob Lawson** and **Marilyn Peters** from the Systems group will bid UTCS farewell in August. Bob has accepted a position with Human Computing Resources (HCR). Marilyn will be setting up residence in Burnaby, British Columbia, where her husband has accepted a Faculty position at Simon Fraser University. Good Luck to both of you!

**Kathryn Bourne,** from our own Publications group, has left UTCS after many eventful years of service. We'll miss you, and good luck in the future.

*Elizabeth Weitmann*

## Recent Acquisitions in the Computer Library

ACM Symposium on Theory of Computing, 15th, Boston, April 1983.
Proceedings.
New York, ACM, 1983.

Association for Computing Machinery.
Proceedings of the 37th National Conference, Dallas, Oct. 1982.

Canadian Information Processing Society.
Canadian computer census, 1983.
Toronto, CIPS, 1983.

Chen, Peter P., ed.
Entity-relationship approach to information modeling and analysis.
Saugus, Calif., ER Institute, 1981.

Ershov, Andrei P., and Knuth, D.E., eds.
Algorithms in modern mathematics and computer science.
Berlin, Springer-Verlag, 1981.

Hailpern, Brent T.
Verifying concurrent processes using

continued...

**Computer Library** continued

temporal logic.
Berlin, Springer-Verlag, 1982.

Kraft, Philip.
Programmers and managers: the routinization of computer programming in the United States.
New York, Springer-Verlag, 1977.

MacEwen, Glenn H.
Introduction to computer systems using the PDP-11 and Pascal.
New York, McGraw-Hill, 1980.

Maule, H.G., and Weiner, J.S., eds.
Design for work and use.
London, Taylor & Francis Ltd., 1981.

Office Automation Conference, 2nd, Houston March 1981.
Digest, ed. by Ira W. Cotton.
Arlington, Va., AFIPS Press, 1981.

Wiederhold, Gio.
Database design. 2d ed.
New York, McGraw-Hill, 1983.

*Stephanie Johnston*

# UTCS Terminal and Advising Sites

## Names and Locations

- **Central Advising Office (CAO), 978-HELP,** McLennan Labs, 60 St. George St., Room 257
- **Education Facility (Educ),** McLennan Labs, 60 St. George St., Room 221
- **Engineering Annex (EAT, EUT, CDF),** 11 King's College Road, Rooms 103, 104, 107, 201, 203.
- **Erindale College (Erin), 828-5339,** Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
- **New Physics (NPT),** Burton Tower, 60 St. George St., Room 1202
- **Robarts,** Robarts Library, 130 St. George St., Room 1061A
- **Scarborough College (Scar), 284-3122,** Military Trail, Scarborough Campus, Room S624
- **Sidney Smith (AST & ASUT),** 100 St. George St., Rooms 1071, 1073, 2105
- **Victoria University (Vic),** 73 Queens Park Cres., Room 012.

| | **Hours of Operation** | | | | **Restrictions*** | **Advising** |
|---|---|---|---|---|---|---|
| | Mon-Thurs | Fri | Sat | Sun | | |
| AST | 8:00-22:00 | 8:00-22:00 | 8:00-22:00 | 8:00-22:00 | Research | No |
| ASUT | 24 hrs/day | 24 hrs | 24 hrs | 24 hrs | BICS | No |
| CAO | 10:00-18:00 | 10:00-18:00 | | | | Rm 257 |
| CDF | 24 hrs/day | 24 hrs | 24 hrs | 24 hrs | | No |
| EAT | 24 hrs/day | 24 hrs | 24 hrs | 24 hrs | | No |
| Educ | 9:00-16:30 | 9:00-16:30 | | | Research** | CAO |
| (outer) | 9:00-23:00 | 9:00-16:30 | | | Research | CAO |
| Erin (2039) | 9:00-21:30 | 9:00-16:30 | 12:00-17:30 | 12:00-17:30 | Research | Rm 2005 |
| (2045) | 9:00-21:30 | 9:00-16:30 | 12:00-17:30 | 12:00-17:30 | Undergrads | Rm 2005 |
| EUT | 24 hrs/day | 24 hrs | 24 hrs | 24 hrs | Undergrads | No |
| NPT | 24 hrs/day | 24 hrs | 24 hrs | 24 hrs | Research (Key access) | CAO |
| Robarts | 8:30-23:00 | 8:30-18:00 | 9:00-17:00 | closed | BICS | No |
| Scar | 9:00-24:00 | 9:00-24:00 | 10:00-17:00 | | UNIX on CDF | Rm 627, 628A |
| Vic | closed | closed | | | BICS | |

* Research includes graduates, faculty, staff. ** May be unavailable due to UTCS courses.

## Advising Hours

| | |
|---|---|
| CAO | Monday to Friday, 10:00 - 18:00 |
| Erin, Scar | During normal hours |

## Services Available

| | BICS | Keypunch | LIBRA | PACX | Printers | Oracle | UNIX |
|---|---|---|---|---|---|---|---|
| AST | | Y | | Y | Y | | |
| ASUT | Y | | | | Y | Y | |
| CDF | | | | | Y | | Y |
| EAT | | Y | Y | Y | Y | | |
| EUT | | Y | | | Y | Y | |
| Educ | | | | Y | | | |
| Erin | | | Y | Y | Y | | Y |
| NPT | | Y | | Y | Y | | |
| Robarts | Y | | | | Y | Y | |
| Scar | | Y | Y | Y | Y | | Y |
| Vic | Y | | | | Y | Y | |

# UTCS Systems

**3033/N12 Processor**

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR, APL and ATMS services
- 12 megabytes of memory
- MVS with JES2

**3033/U16 Processor**

- located in McLennan Physical Laboratories
- provides "Glass Keypunch" access to HSJS using BICS
- 16 megabytes of memory
- UTS under VM

**4341 Mod II Processor**

- located in McLennan Physical Laboratories
- provides administrative IMS/VS, DB/DC, Batch and TSO
- 8 megabytes of memory
- MVS with JES2

**DECsystem-10 Model 1090**

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 512 K - 36 bit words of memory
- TOPS-10 operating system, version 7.01A
- GALAXY queuing, spooling, and batch subsystem, Version 2.0

**PDP 11/70**

- located in McLennan Physical Laboratories
- provides UNIX text processing
- 640K of memory
- UNIX (Western Electric)

**VAX 11/780**

- located in McLennan Physical Laboratories
- provides backup, program testing, and inter-communication relating to student services
- provides Spare Cycle Service
- 4 megabytes of memory
- VMS

**Communications & Technical Support**

- located in Sandford Fleming Building, Fourth Floor
- provides consulting and configuration of microcomputer systems
- offers media conversion services
- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains small computer systems on a contract basis or on a cost-per-call basis.
- PDP-11 Lab has DEC PDP-11/40 with GT44 Graphics with various disk and tape formats; numerous special peripherals
- provides specialized interactive graphics
- provides online and real-time computing services, data acquisition and conversion, and minicomputer services
- maintains copies of some DECUS public-domain software
- provides consulting on minicomputers; configures and installs minicomputer systems

**Computer Disciplines Facility**
VAX 11/750 (2 megabytes of memory)
VAX 11/780 (4 megabytes of memory)

- located in Engineering Annex
- provides Computer Science interactive access
- UNIX (Berkeley)

**Scarborough System**
**VAX 11/750**

- located at Scarborough College
- provides "Glass Keypunch" access to HSJS using LIBRA
- 2 megabytes of memory
- VMS

**Erindale System**
**VAX 11/780**

- located at Erindale College
- provides "Glass Keypunch" access to HSJS using LIBRA and Research access
- 4 megabytes of memory
- VMS

# Consulting and Enquiries

| | | | |
|---|---|---|---|
| External Marketing Consultants | Dr. Bill Fehlner | MP217 | 6509 |
| | Ihor Prociuk | MP217 | 6875 |
| Erindale College | Peter Wall | 2043 | 828-5311 |
| Scarborough College | William Barek | S628-A | 284-3173 |

| | | | |
|---|---|---|---|
| General Enquiries | 4990 | System Status Enquiries (DEC) | 4318 |
| Central Advising | HELP | System Status Enquiries (IBM) | 7393 |
| Access Codes | 8703 | 300 Baud Interactive Services | 6200 |
| Account Enquiries (U of T) | 8702 | 1200 Baud Interactive Services | 3959 |
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